IV. *Descriptions of some Exotic Lamellicorn Beetles.*

By J. O. Westwood, M.A., F.L.S., &c.

[Read November 7th, 1877.]

(Plates I. and II.)

Family CETONIIDÆ.

Subfamily Trichiides.

Genus Calometopus, Blanchard.

Catal. de la Coll. Entomologique d. Mus. d'hist. nat. Paris, t. i. 1850, p. 43; Lacordaire, Hist. n. Col. iii. p. 566.

Calometopus Nyassæ. (Pl. I. fig. 1.)

Fem.—Niger punctatus, capitis clypeo profunde inciso, pronoto transverse-ovali, nigro, macula utrinque parva luteo-setosa ad angulos anticos, alterisque duabus majoribus angulos posticos occupantibus; elytris nigris, disco irregulariter glauco, nigro parce punctato, maculis duabus fulvis ovalibus prope scutellum nigro lineatis; maculisque duabus glaucis prope apicem; lateribus elytrorum suturaque acute carinatis; segmentis detectis abdominis lateraliter albo maculatis, propygidio lineis duabus transversis albis; pygidio obscure rufo, opaco, macula cuneata apicali albo-setosa; pedibus nigris; tibiis posticis apice digitatis: corpore infra nigro, nitido; lateribus metasterni et abdominis parum vermiculatis; setisque griseis parum vestitis, segmentis 2 et 3 ventralibus utrinque transversim griseo subfasciatis.

(Marem non vidi.)

Long. corp. lin. 7½.

Habitat Nyassa, Africæ interioris. In Mus. Britann. et Higgins.

Note.—The mandibles are entire at the tip, having a short setose transverse tooth or spine near the base of the inner margin (fig. 1*a*). The maxillæ are unarmed on the inner margin, but are furnished with a long densely hairy simple terminal lobe. The maxillary palpi were wanting in the specimen examined (fig. 1*b*). The men-

tum is deeply notched in front, with the lateral lobes rounded; it is very hairy, and the labial palpi (of which the apical joint alone is visible from the outside) are slender (fig. 1*c*). The curious digitation of the posterior tibiæ (whence the name of the genus) appears, from the corrected description given by M. Lacordaire, to be confined to the female sex. The genus is well characterized by the small flat glabrous elytra, having the suture and the lateral margins elevated into strong carinæ. The following is the description given by Mr. Blanchard of the type species of the genus :—

Calometopus senegalensis, Blanch. l. c.

Niger, capite medio rufo, prothorace omnino rufo seu obscuro; scuto (scutello) rufo nigro-limbato; elytris fulvis, margine externo nigro; sutura carinaque laterali elevatis, pygidio nigro rugoso maculis fulvis binotato, abdomine nigro, maculis lateralibus albis; pedibus fulvis, tarsis tibiarumque apice nigris. Variat femina elytris fere omnino nigris.

Long. 13—15 mill.

According to M. Lacordaire the male is dull black above, shining beneath, and the female fulvous, with the forehead, the sides of the elytra beyond the middle, the breast, abdomen and tarsi black; these colours possibly being variable in both sexes. As the specimens which I have seen from Nyassa are uniform in their colours, I have not hesitated to consider them as forming a distinct species from the Senegal one.

Genus Valgus, Scriba.

Valgus furcifer, n. sp. (Pl. I. fig. 2.)

Niger punctatissimus luteo nigroque squamosus, pronoto subquadrato, antice supra caput parum rotundato-producto, angulis anticis lateralibus rotundatis, posticis extus parum acute productis; disco in medio longitudinaliter paullo canaliculato, tuberculisque duobus dorsalibus in medio instructo, margine postico curvato et ad basin scutelli rotundatim-producto: elytris latis subquadratis, lateribus deflexis, dorso subplanis; basi fulvescentibus, singulo prope scutellum nigro 4-striolato, striolis curvatis: fascia abbreviata transversa nigra pone apicem scutelli; dimidio postico elytrorum lutescenti, fascia transversa pone medium nigra, postice prope suturam extensa; plaga lutescente transverse-ovata apicali in singulo elytro relicta, maculam nigram

includente; propygidio obscure rufo in angulum acutum extus utrinque producto, tuberculisque duobus nigro-setigeris in medio instructo, spatio triangulari luteo setoso inter tubercula notato, pygidio etiam in medio luteo-setosa apiceque in processum furcatum terminato: pedibus longis nigris; tibiis anticis extus 3-dentatis, denticulisque duobus intermediis armatis; corpore infra obscure nigro, subtiliter punctato, squamulis obscure luteis parsim, metasterni lateribus squamis fulvis densius vestitis.

Long. corp. lin. 5.

Habitat in Sumatra. In Mus. D. Higgins.

Subfamily Goliathides.

Genus Narycius, Dupont.

Sub-genus Cyphonocephalus, Westw. Arc. Ent. 1, p. 115.

Type, *C. smaragdulus*, Westw. l. c., pl. 33, fig. 2, and details. (Pl. I. fig. 3 ♂, fig. 4 ♀.)

The original description of this interesting group above referred to was founded upon an unique specimen from the East Indies, contained in the Museum of the Bristol Philosophical Institution, which, so far as I know, has remained unique up to the present time. The specimen is a male of a brilliant green colour, with the clypeus, horns of the head and tarsi brunneous, and with the femora and tibiæ more opaline. I am now indebted to J. Wood-Mason, Esq., of the Calcutta Museum, for a specimen of the male agreeing with the Bristol specimen; a second male of a rich dark purple colour, agreeing in all its characters with the type specimen, and which is represented in the accompanying figure. With these, Mr. Wood-Mason transmitted a specimen of the female represented in fig. 4, of the natural size. Like the females of almost all cornuted males, it is smaller than the other sex. It will be seen, by comparing the figures of the female now published of this species (fig. 4) with that of the female of *Narycius opalus*, given in my Arcana Entomologica, vol. 1, pl. 33, fig. 1, and p. 114, and their respective details, that they are nearly identical, not only in general form and in the armature of the head (the latter being a very unusual circumstance in female insects), but also in the details of the mouth-organs, especially the maxillæ.

If the characters of these females alone were regarded, I should not hesitate to consider them as congeneric, but the different condition of the legs of the males of the two species indicates the necessity for their subgenerical separation. (Comp. Arc. E., pl. 33, fig. 1*b*, and my pl. I. fig. 4*c*.) The mesosternal spine is not, however, so much porrected in *C. smaragdulus* as in *N. opalus*. Like the male represented in my Arcana Ent., this female is of a rich green colour.

Subfamily Cremastocheilides.

The characters of the two following species were introduced into the Appendix of my Thesaurus Entomologicus Oxoniensis, but no figures of them have hitherto appeared. They are, therefore, now added in order to complete the knowledge of the insects, for which in fact (in this difficult group) representations are quite requisite.

Genus Cyclidius, MacLeay.

Cyclidinus velutinus, Westw. Thes. Ent. Oxon. App. p. 204. (Pl. I. fig. 5.)

Totus niger, opacus: capite parvo sub lente punctatissimo, inter antennas bi-impresso; mento et maxillis ut in Cycl. lugubre formatis: pronoto multo latiori quam longo, lateribus in medio dilatato-rotundatis, angulis posticis lateralibus acutis, dorso depresso, utrinque impressione ovali parum profunda notato; elytris basi latis, dorso planis, leviter ovali-cicatricosis; pygidio leviter rotundato-cicatricosis; pedibus subgracilibus; corporis subtus (præsertim ventre) rudius punctato, guttisque minutis lutescentibus parum irrorato.

Long. corp. lin. 9; lat. humer. elytr. lin. 4.

Habitat ——? In Mus. D. Parry.

Genus Cremastocheilus, Knoch.

Cremastocheilus crassipes, Westw. Thes. Ent. Oxon. p. 204. (Pl. I. fig. 6.)

Magnus, latus, supra deplanatus, niger, capite punctato, clypei margine antico parum recurvo, semicirculari, mento rotundato, postice integro, disco glabro; pronoto lateribus rotundatis versus caput angustioribus, dorso parum convexo, angulis anticis fere ad oculos porrectis, subacutis, impressione sat profunda intra angulos notato, angulis

posticis in cornu breve retro productis, impressione ovali intra angulos posticos, margine postico curvato, disco punctato punctis præsertim lateralibus majoribus et rotundo-cicatricosis, breviter setoso: elytris latis, dorso planis, punctis ovalibus postice incompletis parum profundis, guttis minutis strigisque brevibus tenuissimis interdum undulatis prope suturam, albis, parce notatis; pedibus brevibus latis crassis, fossoriis, tibiis anticis dentibus valde obtusis, tarsis tibiis multo brevioribus, articulis latioribus quam longis.

Long. corp. lin. $8\frac{1}{2}$; lat. humer. elytr. lin. $3\frac{1}{2}$.

Habitat in California. In Mus. Parry.

This very distinct species belongs to the group with the mentum entire in the middle of its hind margin, and which have the anterior tarsi with the terminal joints not suddenly dilated, but differs from the two species hitherto described, having the legs short and fossorial (*C. Schaumii and angularis*), by having the legs comparatively much broader and shorter, with the joints of the tarsi broader than long.

The following additional species of the genus *Cremastocheilus* has recently been described, and is here added to complete the bibliography of the genus:—

Cremastocheilus Wheeleri, J. Leconte, in Appendix H. 10, to Report of Chief of Engineers of the United States Geographical Survey, west of the 100th meridian. Washington, 1876.

Brownish-black, not shining; head feebly punctured, much dilated in front, broadly truncate, side angles rounded. Prothorax subquadrate, a little wider behind, sinuate on the sides; front angles acute, incurved and densely hairy on the inner side; hind angles rounded, expanded posteriorly; middle third of disk depressed, covered with large shallow punctures; lateral thirds separated by a shallow impression more distinct near the base and tip, very sparsely punctured, rather shining and quite smooth behind the middle. Elytra with large shallow elongate punctures as usual; humeri shining; mesothoracic epimera not visible from above in consequence of the posterior expansion of the hind angles of the prothorax. Tibiæ compressed; front pair with two approximate teeth; middle pair with two distant teeth besides the apical one;

hind pair with a small acute denticle about the middle. Tarsi compressed, hind pair two-thirds as long as the tibiæ. Beneath feebly punctured, pubescent with brown hair; mentum deeply concave, subtriangular, bisinuate behind, with the side angles produced and rounded; hind margin feebly notched at the middle.

Length, 10·6 mm. = 0·42 inch.

Northern New Mexico; Lieut. W. L. Carpenter.

In the division of the disk of the prothorax into three parts, this species seems to be related to *C. saucius*. The dividing groove is, however, not well defined, and in other respects there is no resemblance. The form of the mentum is quite peculiar, and in a group where specific differences are of less magnitude, would warrant the establishment of a separate genus.

Subfamily Dynastides.

Genus Amblyodus, n. g.

Genus novum Phileuro proximum, Leptognatho et Actinobolo affine; differt capite cornuto mandibulisque extus obtuse dentatis.

Corpus sub-breve, subparallelum subcylindricum (Sienodendron parum simulans).

Caput mediocre lateribus in cornua duo curvata, apice obtusa elevato-porrectis (pl. II. figs. 1*a*, 1*b*).

Mandibulæ porrectæ, lateribus externe dilatatis et obtuse dentatis, dextera 2, seministra 3 dentibus obtusis armatis; spatio parvo setoso marginis interni, laminaque motari basali instructæ (fig. 1*c*).

Maxillæ elongatæ extus longe setigeræ, lobo apicali ad basin in spinam curvatam apice denticulatam producto; parte apicali curvata, apice obtusa, intus inermi vel dente obtuso armata; palpis maxillaribus mediocribus articulo ultimo elongato ovali (fig. 1*d*).

Mentum corneum crateriforme, medio canaliculatum, basi carinatum punctatum setosum, apice emarginato (fig. 1*e*).

Labium internum: palpi labiales intus mentum insertæ articulo apicali tantum detecto (fig. 1*e*).

Pronotum magnum semiovale, latitudine elytris æquale, antice retusum scabrum, margine postico fere recto, utrinque lobo elevato obliquo glabro instructum.

Scutellum triangulare apice rotundato elytra brevia apice rotundata, convexa.

Pedes mediocres, tibiæ anticæ extus 4-dentatis, tibiæ intermediæ et posticæ dentatæ.

Having in the 4th volume of the Transactions of the Entomological Society published the characters of some interesting forms of *Lamellicornia* allied to *Phileurus*, I have the gratification of adding another equally curious from Nicaragua, collected by Mr. Belt at Chontales. It appears most nearly allied to *Actinobolus* (l. c. Pl. II. fig. 2) in the structure of the maxillæ and mentum, but the front of the head in that genus (ib. fig. 2*b*) is radiated, whilst the mandibles (ib. fig. 2*d*) are armed above only with a short obtuse tooth. The males of *Leptognathus** (ib. fig. 4) have the front of the pronotum rather retuse, but the front of the head is bilobed in both sexes, and the mandibles (ib. fig. 4*a*) have the outer lobe produced to a fine point, and the inner lobe large, oval and setose, the maxillæ also (ib. fig. 4*e*) want the strong armature of the apical lobe.

Species unica, *Amblyodus taurus*, n. sp. (Pl. II. fig. 1.)

Niger, nitidus capitis cornubus glabris supra deplanatis apice extus elevato-curvatis obtusis, pronoto antice retuso, varioloso rugoso; postice glabro utrinque elevato, angulis posticis acutis punctatis, elytris punctato-striatis.

Long. corp. lin. 11.

Habitat in Nicaragua, Chontales. D. Belt.

Genus Pantodinus, Burm.

Pantodinus Klugii, Burmeister Handb. d. Ent. v. p. 291. (Pl. II. fig. 2*a*.)

No figure of this very interesting insect having hitherto been published I have taken this opportunity of giving a representation of it, together with its trophi, from sketches made by Dr. Burmeister. The genus was founded on an unique male from Guatemala in Mr. Melly's Collection, and was placed by its author in conjunction with the genera *Leptognathus* (under the name of *Cryptodontes*)

* I do not recognize the necessity of rejecting the name *Leptognathus*, which I proposed for this genus (in order to avoid the confusion arising from the use of the name *Cryptodon*, given to it in MSS. by Latreille, with that of *Cryptodus*, given to *another Lamellicorn genus* by MacLeay), in consequence of there having been a genus of *fishes* previously named *Leptognathus* by Swainson.

and *Xenodorus*. De Brême (Ann. Soc. Ent. France, 1844, pl. 7, fig. 8), in a terminal section of the *Xylophila* (*Dynastidæ*, M'L.), immediately preceding the *Lucanidæ*.

By M. Lacordaire it was placed with *Leptognathus* at the end of the *Dynastidæ*, immediately preceding the *Cetoniides*, with the remark, "Ces insectes sont, dans le sens rigoureux du mot, des Dynastides pourvus de mandibules de Cétonides. Leur cavité buccale a, du reste, des rapports sensibles avec celle des derniers Phileurides, notamment des Actinobolus et leur labre est situé comme celui de Xenodorus du groupe des Oryctides vrais; seulement il est encore plus petit et moins apparent." (Hist. d. Coléopt. iii. p. 462.)

Both sexes of this insect having been received by M. Candèze, he has been enabled to study it more completely, and has come to the conclusion that it ought to be placed at the head of the *Trichiides* in the family *Cetoniidæ*, a position which, we have seen, was already indicated to a certain extent by M. Lacordaire.

"Je pense," says M. Candèze, "que la veritable place de Pantodinus Klugii est dans les Cétonides, en tête de Trichides, ou avec les Inca, il représente les Goliathides. L'insecte a les hanches antérieures coniques et saillantes comme toutes les Cétonides, tandis que les Dynastides les ont franchement transversales et enfouies, ce que est pour Lacordaire et Erichson le caractère fondamental qui distingue les deux tribus; il a des mandibules en partie membraneuses, autre caractère essentiel; enfin le chaperon de la femelle que n'est pas pourvue de la corne que l'on remarque chez le mâle est un chaperon de Cétonide et nullement de Dynastide. (Candèze en Ann. Soc. Ent. Belgique XVI., p. xli.)

The illustrations of this curious insect, now published, will materially assist in the determination of the affinities of this remarkable species.

Genus Nicagus, Leconte.

Nicagus obscurus, Leconte. (Pl. II. fig. 3.)

Ochodæus obscurus, Leconte, Journ. Acad. Philad. 1848, p. 8.

Nicagus obscurus, Leconte, Class. of Coleopt. N. Amer. 1861, p. 130; Parry, Proc. Ent. Soc. 1870, p. iii; Westwood, Proc. Ent. Soc. 1870, p. ix; H. Deyrolle, Trans. Ent. Soc. 1873, p. 344.

This remarkable insect was first described by Dr. J.

Leconte as an *Ochodæus*,* and was subsequently placed by him as a distinct tribe between the *Acanthocerini* and *Trogini*. Subsequently, however, as we learn from Major Parry's note in the Proceedings of the Entomological Society above referred to, Dr. Leconte intimated his dissatisfaction as to the correctness of his previously-recorded views, suggesting that it might possibly be better placed among the *Lucanoidea*,† an opinion subsequently

* The following is Dr. Leconte's detailed description of this insect:—"*Nicagus obscurus* is the only member of this tribe (*Nicagini*) known to me. It is an oval convex insect, more than a quarter of an inch long, brown, densely punctured, and covered with very short pale hair. It resembles in appearance some of the *Scricæ*, or a nearly smooth *Trox*. It is found throughout the Atlantic district. The head is rounded, moderately convex, the front finely margined; the labrum is broadly rounded, hairy; the mandibles short, pyramidal, not very prominent; the mentum is thick, triangular, hairy, pointed in front; the palpi short, the last joint oval. The antennæ are 10-jointed, the club 3-jointed, longer in the male than in the female. The anterior coxæ are large, conical, prominent, the middle ones nearly contiguous, oblique; the epimera of the mesothorax attain the coxæ. The elytra cover the pygidium. The abdomen has five free ventral segments. The legs are normal in form; the anterior tibiæ are 4-toothed, the middle and hind ones gradually thickened towards the tip in the female, but slender in the male, with one small sharp tooth and some small denticles on the outer face; the spurs of the hind tibiæ are acute in the male, obtuse in the female; the tarsi are long and slender in the male, but shorter and stouter in the female; the onychium is narrow, and bears two long bristles, as in *Lucanidæ*.

"I have been very much at a loss where to place this curious insect. The joints of the club of the antennæ do not appear to be capable of being brought into absolute contact, as in other *Scarabæidæ*, and the club therefore appears pectinate. I was therefore inclined to consider it as allied to the European *Æsalus*, among the *Lucanidæ*, which genus it resembles somewhat in form; but the small size of the oral organs, and the triangular mentum, have induced me rather to place it as a tribe of the *Laparostict Scarabæidæ*, and the position here given it well corresponds both with its external form and *Melolonthine* sexual characters. Of its habits I know nothing."

† In the Proceedings of the Ent. Soc., 7th Feb. 1870, p. 111, it is recorded that "Major Parry states that, on his recent visit to this country, Dr. Leconte presented him with a specimen of this insect, intimating that he was not satisfied as to the position he had assigned to *Nicagus*, namely, among the *Scarabæoidea*, between *Acanthocerus* and *Trox*, and suggesting that it might possibly be better placed among the *Lucanoidea*. The specimen had been carefully examined by Major Parry and Mr. Charles Waterhouse, but as regarded the principal character of the antennæ of the *Lucanoidea*, the immoveability of the leaflets of the clava, it was found that in *Nicagus* the leaflets were slightly moveable; in this respect, however, Mr. Waterhouse found it to agree with some Australian species of *Ceratognathus*, and, on examining the mouth, he could not detect anything by which it could be separated from the *Lucanoidea*, whilst the penicillate maxillæ were alone sufficient to separate it from the *Trogidæ* (ibid. p. ix.). Professor Westwood said that he had examined Major Parry's specimen of *Nicagus obscurus*, and without saying to what group of *Lamellicorns* the genus was properly referable, he felt clear that it did not belong to any of the *Lucanoid* families."

endorsed by Mr. C. Waterhouse and M. H. Deyrolle. In this diversity of opinion I have thought it would be considered of interest to publish a series of figures representing the structural details of the insect, which I have been enabled to make upon a dissection of a specimen presented by Dr. Leconte to Major Parry, amongst which will be especially considered worthy of notice the following characters not hitherto remarked upon, namely, the simple internal margin of the mandibles, destitute of a molar plate, the entire condition of the eyes, the finely crenulated lateral margin of the prothorax, the small size of the teeth of the outer edge of the fore tibiæ, except the two terminal ones, and the remarkable form of the mentum especially when seen laterally. These characters certainly bespeak an affinity with some of the small obscure Australian *Lucanidæ*, such as *Ceratognathus;* but a comparison of the details here given with those of various genera of *Trogidæ*, published in my memoir in Trans. Ent. Soc. vol. IV. pl. 11, especially those of *Apalonychus*, Westw. fig. 5, appears to prove (as it seems to me) the near relationship of *Nicagus* to those insects. In its details, also, it does not very much disagree with those of *Achloa*, given by Erichson, Entomographien, pl. 1, fig. 6. This diversity of opinion will, I think, render my series of illustrations of the characters of the genus acceptable to Coleopterists.

DESCRIPTION OF THE PLATES.

Plate I.

Fig. 1. *Calometopus nyassæ*, the female; 1*a*, mandible; 1*b*, maxilla, without the palpus; 1*c*, mentum and palpi; 1*d*, extremity of posterior tibia and base of tarsus.

Fig. 2. *Valgus furcifer* magnified; fig. 2*a*, the anterior tibia; 2*b*, *propygidium* and *pygidium* seen sideways; 2*c*, the same seen from behind.

Fig. 3. *Cyphonocephalus smaragdulus*, the dark purple variety of the male of the natural size.

Fig. 4. *Cyphonocephalus smaragdulus*, the female of the natural size; 4*a*, the head of the female magnified, seen from above; 4*b*, the same seen sideways; 4*c*, the maxillæ without the palpus; 4*d*, the mentum; 4*e*, mesosternal process.

Fig. 5. *Cyclidinus velutinus* magnified; 5*a*, the head and prosternal process seen sideways; 5*b*, mandible; 5*c*, maxilla; 5*d*, mentum

seen from the outside; 5*e*, the same seen from within the mouth, showing the setose labium connate with the inner surface of the mentum and the labial palpi.

Fig. 6. *Cremastocheilus crassipes* magnified; 6*a*, mentum.

Plate II.

Fig. 1. *Amblyodus taurus* slightly magnified; fig. 1*a*, the head seen from below; fig. 1*b*, the head and front of the prothorax seen sideways; 1*c*, mandible; 1*d*, maxilla; 1*e*, mentum.

Fig. 2. *Pantodinus Klugii*, natural size; 2*b*, the same seen sideways without the legs; 2*c*, clypeus; 2*d*, clypeus from beneath, with the minute labrum *in situ;* 2*e*, labrum; 2*f*, mandible; 2*g*, maxilla; 2*h*, mentum, with terminal bilobed labium and labial palpi; 2*i*, antenna.

Fig. 3. *Nicagus obscurus* magnified; 3*a*, side of head and eye; 3*b*, labrum and mandibles *in situ;* 3*c*, mandible; 3*d*, maxilla; 3*e*, mentum and labial palpi from beneath; 3*f*, the same seen sideways; 3*g*, antenna; 3*h*, underside of thorax; 3*i*, underside of abdomen and base of hind legs; 3*k*, apex of tarsi with bisetose onychium.